



Cronfa - Swansea University Open Access Repository

This is an author produced version of a paper published in:

Higher Education Pedagogies

Cronfa URL for this paper:

<http://cronfa.swan.ac.uk/Record/cronfa38239>

Paper:

Heaviside, H., Manley, A. & Hudson, J. (2018). Bridging the gap between education and employment: a case study of problem-based learning implementation in Postgraduate Sport and Exercise Psychology. *Higher Education Pedagogies*, 3(1), 463-477.

<http://dx.doi.org/10.1080/23752696.2018.1462095>

This item is brought to you by Swansea University. Any person downloading material is agreeing to abide by the terms of the repository licence. Copies of full text items may be used or reproduced in any format or medium, without prior permission for personal research or study, educational or non-commercial purposes only. The copyright for any work remains with the original author unless otherwise specified. The full-text must not be sold in any format or medium without the formal permission of the copyright holder.

Permission for multiple reproductions should be obtained from the original author.

Authors are personally responsible for adhering to copyright and publisher restrictions when uploading content to the repository.

<http://www.swansea.ac.uk/library/researchsupport/ris-support/>

Bridging the gap between education and employment: a case study of problem-based learning implementation in Postgraduate Sport and Exercise Psychology

Helen J. Heaviside, Andrew J. Manley & Joanne Hudson

To cite this article: Helen J. Heaviside, Andrew J. Manley & Joanne Hudson (2018) Bridging the gap between education and employment: a case study of problem-based learning implementation in Postgraduate Sport and Exercise Psychology, Higher Education Pedagogies, 3:1, 463-477, DOI: [10.1080/23752696.2018.1462095](https://doi.org/10.1080/23752696.2018.1462095)

To link to this article: <https://doi.org/10.1080/23752696.2018.1462095>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 12 Oct 2018.



Submit your article to this journal [↗](#)



Article views: 70



View Crossmark data [↗](#)

Bridging the gap between education and employment: a case study of problem-based learning implementation in Postgraduate Sport and Exercise Psychology

Helen J. Heaviside^a , Andrew J. Manley^a and Joanne Hudson^b

^aInstitute for Sport, Physical Activity and Leisure, Leeds Beckett University, Headingley Campus, Leeds, UK;

^bApplied Sport, Technology, Exercise and Medicine Research Centre, School of Sport and Exercise Sciences, College of Engineering, Swansea University, Swansea, UK

ABSTRACT

The purpose of this case study was to explore Postgraduate Sport and Exercise Psychology students' and their lecturer's experiences of PBL, and, its role in developing their employability skills. A focus group was conducted with four students (*Mage* = 22.75 years, *SD* = 0.96 years; *n* female = 2) and a conversational interview was conducted with the lecturer (age = 37 years, teaching experience = 11 years). Inductive thematic analysis of verbatim transcripts was used as a basis for developing portrait and composite vignettes to illustrate their experiences. Their underpinning themes suggested that PBL was instrumental for developing key employability skills: team working, communication and interpersonal sensitivity; thinking critically, creatively and flexibly; for helping students translate academic knowledge into application in future employment contexts, and for increasing awareness that learning is a lifelong developmental process.

ARTICLE HISTORY

Received 1 June 2017
Revised 13 December 2017
Accepted 20 January 2018

KEYWORDS

Employability skills;
professional development;
critical thinking

Whilst not the only motive for attending University, numerous sources identify that one of the main reasons UK students embark on a university degree is to improve their job prospects (e.g. Bhadwa, 2017; Lowden, Hall, Elliot, & Lewin, 2011; Wells, 2011). However, figures indicate only 56% of graduates and 75.3% of those with a postgraduate degree (aged 21–30 years) are in high skilled employment, with 31% of undergraduates and 15.3% of those with a postgraduate degree employed in low skilled non-graduate jobs and 13 and 9.4%, respectively, either unemployed or inactive (Department for Education, 2017). These figures complement evidence that university leavers are ill equipped for employment because they lack essential workplace skills (e.g. Hung, 2013), resulting in many vacant graduate jobs (Association of Graduate Recruiters, 2016). Thus, higher education institutes need to embed transferable and career-related skills development within the curriculum alongside subject-specific knowledge acquisition to ensure that students improve their chances of obtaining high-skilled employment (Fahnert, 2015).

The teaching approaches used within universities could support students in developing these skills (Lawson, Fallshaw, Papadopoulos, Taylor, & Zanko, 2011). It has been suggested that 90% of the skills required within employment come from experiential learning, and traditional lecturing methods are ineffective at developing the transferable and experiential skills (e.g. critical thinking, problem-solving) that university leavers need (Beckem & Watkins, 2012; Wakeham, 2016). Regardless, traditional teaching methods still represent a dominant approach to knowledge dissemination in many universities (e.g. Smith & Valentine, 2012). Therefore, to promote the development of employability skills, the curriculum needs to include alternative, authentic, real-life teaching approaches.

Problem-based learning (PBL) is a type of experiential learning which could be used to bridge the gap between education and employment (e.g. Carvalho, 2016; Smith, Duncan, & Cook, 2013). PBL is a student-centred approach where students are required to collaboratively solve a contextualised problem (Barrell, 2007; Cornell University Centre for Teaching Excellence, 2017). The lecturer's role is to facilitate and guide students towards discovering answers independently instead of being given the answers, offering students a richer and more holistic learning experience (Dahlgren, 2000). Thus, PBL might also help students to more explicitly recognise the employability skills they are developing, as many are not aware of this (Wakeham, 2016). PBL is underpinned by constructivist assumptions, in that learning through PBL is considered to be 'constructive, self-directed, collaborative, and contextual' (Dolmans, De Grave, Wolhagen, & van der Vleuten, 2005, p. 39). Constructivism has recently been acknowledged for its role in developing skills required within twenty-first century employment (Dolmans et al., 2005; Rutt et al., 2013; Scott, 2015), hence its relevance in the present study.

The implementation of PBL within higher education has recently increased, with research demonstrating its broad application in engineering (e.g. McLoone, Lawlor, & Meehan, 2016), social work (e.g. Monrad & Mølholt, 2017), and sport and exercise science (e.g. Duncan, Smith, & Cook, 2013). Numerous studies suggest that PBL can be beneficial for developing employability skills such as optimising learning, encouraging reflection, problem-solving, critical and creative thinking, independent learning and collaboration among students; for developing communication skills, and, knowledge application and transfer (e.g. Duncan, 2009; Hung, 2013; Martin, West, & Bill, 2008; Smith, Duncan, et al., 2013). These are many of the skills required within high-skilled graduate employment (e.g. Cooper, Orrell, & Bowden, 2010; Wilson, 2012). Despite this, research within this area has predominantly focused on undergraduate students, therefore little is known about the influence of PBL on postgraduate employability skills. Considering that approximately 25% of those with a postgraduate degree aged 21–30 years are in low-skilled jobs, unemployed or inactive (Department for Education, 2017), it seems essential to implement and evaluate teaching approaches, such as PBL, which might optimise postgraduates' chances of gaining high-skilled employment after university.

These statistics are particularly relevant (if not alarming) for students and providers of postgraduate programmes in Sport and Exercise Psychology. Professional careers in Sport and Exercise Psychology are not immediately accessible to graduates of MSc programmes. This is due to recent advancements in the professional training of Sport and Exercise Psychologists, many of which were instigated after 2009, when the statutory regulation of all Sport and Exercise Psychologists by the Health and Care Professions Council (HCPC) was formally introduced. As a result of the increased professionalisation of this

particular field of study and practice, graduates of masters level courses are still required to complete at least two further years of supervised experience before they can gain access to protected professional titles (i.e. Chartered Sport & Exercise Psychologist, Registered Practitioner Psychologist) and the careers with which they are associated. Thus, postgraduate programmes linked to such vocational careers should ensure that transferable employability skills (e.g. critical thinking, reflective practice) are embedded in the curriculum wherever possible to facilitate the personal and professional development of their graduates, aiming to optimise their chances of securing a 'first' job en route to their ultimate career goal. The current case study addresses this by exploring Postgraduate Sport and Exercise Psychology students' and their lecturer's experiences of PBL, and, its role in developing their employability skills. Both perspectives have received limited consideration and warrant further exploration.

Method

Participants

The PBL sessions were delivered to 14 Level 7 students ($M_{age} = 24.18$ years, $SD = 4.19$ years) who were enrolled on an MSc Sport and Exercise Psychology Practicum module at a UK University. Four of these students ($M_{age} = 22.75$ years, $SD = 0.96$ years; $n_{female} = 2$) and the Principal Lecturer leading the module (age = 37 years; teaching experience = 11 years; practitioner experience = 10 years) volunteered to participate in this case study. With specific reference to the lecturer's familiarity with PBL, he had first become acquainted with the theoretical principles and concepts associated with this pedagogical approach when studying for a Postgraduate Certificate in Higher Education, which he obtained in 2010. Since then, the lecturer has made efforts to utilise PBL approaches within his teaching wherever deemed appropriate. This project represents one such example. Ethical approval was obtained from the Faculty Ethics Committee and all of the participants provided written informed consent.

Implementation of PBL

PBL sessions were implemented using the hybrid model where PBL does not define the entire curriculum (Carrió, Larramona, Baños, & Pérez, 2011). A Type I PBL curriculum was adopted where a few PBL scenarios were implemented into the module (Kwan & Tam, 2009). This approach was selected because the students had limited experience with PBL, and therefore it was important to ensure they were not overloaded with too many cases throughout the module (Chung & Chow, 2004).

To provide more detail, the sessions of focus (PBL vs. Traditional) were all delivered as part of a 20-credit module entitled 'Practicum'. This 'long-and-thin' module is split into two distinct semesters. In semester one (which is when the PBL and traditional sessions were delivered), students are helped to develop their knowledge and skills of applied practice in sport and exercise contexts. For example, sessions cover important elements such as professional codes of ethics and conduct, theoretical and philosophical approaches to practice, and psychological techniques to help educate and support client groups. In semester two, students engage in client-related work as part of a supervised group placement, provided they have successfully completed specific tasks during semester one.

Typically, sessions delivered in semester one are not lectures in the traditional sense. Rather, they resemble seminar-style classes where pre-session readings are discussed and critically evaluated in respect of the specific theme of the session. There are also some practically oriented sessions, where students have the opportunity to trial some of the skills and techniques they have been introduced to in the initial weeks. The PBL sessions were distinct from other more traditional sessions, as they focused entirely on authentic scenarios or professional considerations drawn from the lecturer's own experiences of applied practice. Specifically, 17% of the curriculum was devoted to PBL, which is similar to previous research which has adopted a hybrid approach (e.g. Carrió et al., 2011). The scenarios presented within these sessions challenged students to work together to identify appropriate, evidence-informed courses of action that could be clearly justified. The scenarios were purposely selected based on the following criteria: (a) they were related to content already covered on the module and (b) there were multiple solutions/suggested actions that could be taken and justified based on the information presented to students (i.e. no single correct answer). To help students prepare for the PBL sessions, they were directed to supplementary reading (Duncan & Al-Nakeeb, 2006; Van Gog & Rummel, 2010) one week in advance so that they could familiarise themselves with this pedagogical approach, and read about how it had been previously applied in higher education contexts akin to their own.

Focus group procedures

Following the module, a focus group interview was conducted with the four students who volunteered to take part in this phase of the study.¹ The focus group was conducted by the first named author who had no previous association with the students on the module, and was therefore deemed to have no power relationship with these students. Focus groups can generate new insights (Gould, Lauer, Rolo, Jannes, & Pennisi, 2008) and understanding of group members' experiences of a particular phenomenon (Then, Rankin, & Ali, 2014) whilst providing rich, in-depth responses (Then et al., 2014). The focus group size was determined using Krueger's (2006) guidelines for a workable size, based on participants' background, the complexity of the topic, and the moderator's level of expertise. The focus group lasted 89 minutes, was audio recorded and verbatim transcribed, producing 54 pages of double-spaced text.

Focus group interview

The focus group interview used a semi-structured questioning approach following processes outlined by Krueger and Casey (2015) and Doody and colleagues (Doody, Slevin, & Taggart, 2013). The moderator encouraged interaction between participants and guided the discussions to ensure they aligned with the research questions (Plummer-D'Amato, 2008; Sparkes & Smith, 2014). To facilitate this, a moderator's guide was developed with five sections. Section one included opening comments and questions to introduce the participants to each other and stimulate discussion across the group. Section 2 focused on the students' experiences at the University and undertaking the module, employing introductory non-threatening questions to prompt this focus. Section 3 encouraged students to self-reflect in relation to the module and included transition questions to set the stage for the key questions asked in Section 4 about the students' experiences of the PBL and traditional teaching

approaches implemented. Section 5 closed the interview and included final comments and summary questions from participants and moderator. Questions included in this guide were based on general ideas relating to the aims of the study (Redmond & Curtis, 2009), but were not all-inclusive or restrictive.

Lecturer interview

An unstructured conversational interview was conducted with the Senior Lecturer to understand his experience of traditional lecturing approaches, of developing and delivering PBL sessions, and his perspective on whether PBL influenced students' engagement, learning, critical thinking, and problem-solving. Conversational interviews start with open-ended questions about the topic and the interviewer follows up on the participant's responses as appropriate (Sparkes & Smith, 2014), keeping the study purpose in perspective (Fife, 2005). The interview lasted 49 minutes, was audio recorded and transcribed verbatim, producing 25 pages of double spaced text.

Data analysis and representation

Inductive latent thematic analysis, employing Braun and Clarke's (2006) six recursive stages was used: (1) data familiarisation, (2) grouping data to generate initial codes, (3) grouping codes into coherent higher order themes, (4) reviewing and refining themes, (5) defining and naming themes, and (6) producing the report. As part of the sixth stage, composite vignettes ($n = 7$; for examples see Blodgett, Schinke, Smith, Peltier, & Pheasant, 2011 and Staff, Didymus, & Backhouse, 2017) were developed to represent the themes. These combine experiences from multiple individuals to form one all-encompassing narrative (Blodgett et al., 2011). Portrait vignettes ($n = 4$), representing one individual's voice and experiences (Blodgett et al., 2011), were used to represent the themes extracted from the lecturer's data. Vignettes effectively represent experiences in a meaningful, understandable, accessible and engaging way (e.g. Erickson, Backhouse, & Carless, 2016).

A multi-stage iterative process was used to develop the vignettes (Blodgett et al., 2011). Transcripts were read and re-read, and key terms, quotes and ideas aligned with each theme were extracted and combined to form the vignettes, with each vignette representing a separate theme and the students' and/or lecturer's voice. To ensure that the vignettes accurately represented participants' voices, direct quotes from the transcripts were maintained as much as possible (97%), with edits only being made to ensure that the vignettes were complete and comprehensible (3%; Blodgett et al., 2011; Carless & Sparkes, 2008). Vignettes were reviewed and cross-referenced with the transcripts to ensure they accurately represented each theme, and, that relevant interview content was not overlooked or altered. They were shared with the third author who checked they were cohesive, concise, enlightening, and accurately represented the themes and interview data (Carless & Sparkes, 2008; Smith, Papathomas, Martin Ginis, & Latimer-Cheung, 2013). Two interviewees confirmed the vignettes' accuracy (Smith, Papathomas, et al., 2013). Employing thematic analysis and presenting themes as vignettes involves adopting both storyteller and story analyst perspectives (see Smith & Sparkes, 2009), an approach that has been supported previously (e.g. Staff et al., 2017). It is important to note that the themes presented here offer *one* interpretation of the data, developed by the researchers and the interviewees during data collection and

analysis. Therefore, these should not be seen as the only outcome of PBL, because divergent interpretations of the participants' experiences are likely to occur dependent on the participant's, researcher's, and reader's unique vantage point (Erickson et al., 2016). Instead, they represent the relevant outcomes for those involved in the study and readers are encouraged to develop their own meanings, interpretations and evaluations of the vignettes, and apply them to their own life experiences as appropriate.

Methodological rigour

Similar to previous research (e.g. Staff et al., 2017), a non-foundational perspective (Sparkes & Smith, 2014) was adopted to judge the quality of research using time-place-contingent criteria: substantive contribution, credibility, meaningful coherence, and resonance. The study aimed to provide substantive contribution methodologically (e.g. using vignettes to represent PBL research is novel), conceptually (e.g. considering PBL for developing employability skills from unexplored perspectives), and practically (e.g. the findings can support lecturers in future practice; Tracy, 2010). Credibility was sought by verifying the findings with a critical friend and with participants. The study aimed to achieve meaningful coherence by ensuring that study aims, methods, co-constructed findings, and previous literature are interconnected throughout the study, for example, using focus groups and vignettes (Tracy, 2010). Resonance was measured through participant and critical friend reflections expressing how interesting, enlightening, and intellectually moving the vignettes were.

Results

Below we provide eleven vignettes which represent our interpretations of the participants' experiences of PBL and highlight the role of PBL in developing employability skills. In doing so, seven key themes are presented: working with others, prepared students for applied practice/work-based learning, understanding knowledge application to the real world, thinking outside the box, critical thinking, develop people skills, and highlights gaps in knowledge and promotes independent learning.

Working with others

This theme represents students' experiences of developing team working and interpersonal sensitivity through PBL. It addresses how sharing alternative perspectives through the processes and challenges in PBL broadened students' awareness of multiple perspectives on, and solutions to, work-based problems. This theme was defined as, 'appreciating multiple perspectives exist and being open to other people's perspectives is key to working with others which helps to facilitate working relationships'.

Student perspective

I learnt a lot from people in my class, because we had to get into groups and work through case studies together. A lot of people came from different backgrounds on the course and we seemed to all think in very different ways, which is really fascinating 'cause you can learn something new by just listening to someone else. We shared lots of different expertise and it was quite interesting to hear different perspectives. For example, some were a

bit more cognitive approached [*sic*] whereas I was more humanistic. Also one of the girls in our group went to the Commonwealth Games and that experience, that not all of us had, is really interesting, because her perspective was very different to ours. So I suppose it's that level of expertise as well, and she's from a sports science background which is my limited area, whereas I'm from a psychology background which is her limited area. So it has been good doing that, you get to know different people and different ways of looking at things. It opens your eyes to other perspectives which is quite good, because sometimes when you work on your own you might think about it a bit from a narrower perspective. I also think problem-based learning was good to build up some rapport with your group, and get to know them.

Prepared students for applied practice/work-based learning

This theme represents students' beliefs that PBL helped them gain insight into, and preparation for, the types of challenges they would face in a work-based context. It explains how PBL encouraged students to reflect on and increase awareness of their own development in this regard. This theme was defined as, 'enhancing feelings of preparation for work-based learning and encouraging reflection on personal development and learning achieved through PBL'.

Student perspective

The problem-based approach was beneficial because it's a practical module so it was good to actually practice something that you would do and it was good to have an idea of what to expect when doing applied practice. It raised awareness to some of the things you probably wouldn't go in expecting and so it was nice to have a heads up saying this is what happens, or these are the problems that you might face, and be able to work out what to do as well. Or even just people in your class, how you would go about approaching them, so you feel at least a little more prepared when going in.

Also, the problem-based approach helped me to reflect, which is a really big aspect of being a psychologist practitioner. After [the lesson] you were able to say I now feel a little bit more knowledgeable with this situation and a little bit more prepared to deal with whatever may come, so I think the problem-based sessions were really good.

This theme was also reflected through the lecturer's experiences, illustrating a clear sense of personal and professional development through the delivery of the PBL sessions:

Lecturer perspective

As a teaching experience, I found PBL sessions to be more positive in many ways compared to the non-PBL sessions. In the delivery of PBL, you're on your toes a lot more and there's a sense of uncertainty – I think that's part of it. The uncertainty creates excitement. So you're in there, you're really listening hard to what people are saying, you're going around the discussions, you're embedded and immersed in the learning experience with everyone else. I actually learnt a lot myself from the PBL discussions – even though I knew the typical outcomes of some of the scenarios presented, I actually got some new ideas as well which challenged my own thinking. I remember saying at the end of one PBL session: 'Do you know I've learned just as much as you guys today, if not more'.

Understanding of knowledge application to the real world

This theme represents students' increased awareness of the translational value of academic knowledge in an employment context. It addresses students' appreciation of the relative places of PBL and traditional teaching approaches in their learning experience. This theme was defined as, 'facilitating knowledge acquisition through traditional lectures and enhancing understanding of knowledge application through PBL'.

Student perspective

With the traditional lectures you learn the content, but in terms of learning how to actually apply it, I think that comes more with the problem-based learning. So in terms of learning raw content I think the traditional approach is better for that, but problem-based learning was better in terms of how to apply it, which in actual real-world application that's a lot more useful, you need to actually know how to apply it.

Thinking outside the box

This theme represents students' increased ability to think creatively and flexibly, recognising the need to adapt thinking and knowledge to novel situations. It reflects students' awareness that learning is continual and solutions in professional practice often require nuanced application of knowledge. This theme was defined as, 'providing an opportunity for creative thinking and recognising the need for flexible thinking in the workplace'.

Student perspective

When you're doing the case studies you aren't just reinforcing what you've learnt. Where you think the knowledge you've learnt from traditional lectures can apply, you get given a case study that has maybe ethical implications, and what knowledge you might have on that area doesn't apply anymore and you've got to think outside the box. So I would say I probably learn just as much if not more in the problem-based learning ones, because you've got the theory but you've also got to apply it and also think outside of the box.

Reflective accounts from the lecturer also indicated that PBL sessions helped to establish a learning environment where innovation and creativity was typically observed in students' behaviour.

Lecturer perspective

With the traditional sessions, there was a limit on how much new stuff came through from the students, probably because there was less scope for them to give feedback or to share ideas. Maybe that's one of the mechanisms of PBL, is to allow people to be a little bit more creative, innovative with their thinking, rather than trying to look at what's on the screen, process that and then respond in line with that.

Critical thinking

This theme represents students' perceptions that PBL enhanced opportunities to develop the critical thinking required for analysing and investigating problems systematically, and, negotiation and persuasion skills involved in collaborative problem-solving. It reflects

students' awareness that the processes involved in PBL promoted independent, critical thinking whilst at the same time, expressing one's views professionally and respectfully. This theme was defined as, 'encouraging critical and independent thought within a forum that nurtures respectable debate'.

Student perspective

Problem-based learning is very good for critical thinking 'cause you've got that scope for debate. In traditional sessions, you're just reading from the slide and being told, and you accept it as facts and don't form your own opinions of it, whereas in problem-based learning sessions you've got other people there who have different opinions than you and you can kind of voice them and discuss. So it encourages debate, and talking, and disagreeing with people; like you don't have to say yes to everything if you've got a constructive point to make, as long as you make it in a reasonable, polite, well-delivered way, it's encouraged. In terms of getting you to actually think on your own accord rather than just trying to be a sponge and absorb everything, I think it's very useful for that as well.

Develop people skills

This theme represents students' experiences of developing communication and interpersonal skills through PBL. It addresses students' awareness that these are important skills for the practitioner, that are not developed with traditional forms of learning. This theme was defined as, 'providing interactive opportunities to develop interpersonal and communication skills'.

Student perspective

In problem-based learning you work on your people skills. Whereas in traditional you don't 'cause you're working very much solitary. So it was good, because you can learn to read people as well, so you learn to read body language and how people react to what you say, you can start to adjust, which if you want to be a practitioner that's obviously an essential skill, learning what to say.

This theme was also identified through the experiences and observations recounted by the lecturer. The volume and intensity of interpersonal engagement between students seemed to increase within the PBL sessions, particularly in those students who might be considered 'hard to reach'. The lecturer also commented on his own level of engagement within the PBL sessions, and suggested that this might partially explain observed increases in student engagement and interaction within such sessions.

Lecturer perspective

There was one international student, Jessica (pseudonym) who struggled to engage a lot of the time. She didn't really respond to any questions, you know, spontaneously. She's always sat back and allowed other people to do the talking. Sometimes, she's actually looked like she's fallen asleep. But in the PBL session where we had the scenarios, she contributed a lot more to discussions. It wasn't like she would 'set the world alight', but she was certainly more engaged. What that means for her overall learning I'm not sure, but I do think that she felt a bit more comfortable as that session went on to actually share some of her own views. Her attendance has also been a lot better since the introduction of the PBL sessions.

I certainly got more engaged myself as an educator in the PBL sessions. Now, the interesting thing to consider here is that if my engagement is greater, then does this increase the chances of the class being more engaged? When I adopt the role of the learner, I am always affected by the person at the front of the class or the person facilitating the session. If they are buzzing with enthusiasm or showing a clear interest, then that has a positive impact on me. There's this social contagion that goes on. I know that for me, if I'm trying to learn about something, and I've got someone leading the session who's obviously enthusiastic and really enjoying it, then I would say I'm likely to learn better.

Highlights gaps in knowledge and promotes independent learning

This theme represents the role of PBL in enhancing students' self-awareness and motivation to use their initiative to continually learn and develop. It discusses how encountering unexpected challenges, and others' solutions to these, highlighted personal limitations. Importantly, this occurred in a supportive context that encouraged honest reflection as part of learning. This theme was defined as, 'a supportive environment for challenging limitations and stimulating personal development'.

Student perspective

We did a case study where you got given a business woman and you had to decide how you would work with her and you ended up talking about performance diaries and stuff, and I suppose in the case study you was kind of like 'ohh yeah that's a good idea I actually don't know what that is' you then had to go away. So it picked out gaps in your knowledge that you weren't aware of I suppose, whereas traditional method you don't really realise where your gaps are. So it shows your limitations. Especially, if there's other people in the group and they seem to know what they're talking about, it makes you think 'maybe I should know this'. So I think you are then inclined to research it a bit. I don't think you really realise your limitations until you're challenged on them which is pretty much what the case studies did.

Again, this theme was not exclusive to the student perspective. The lecturer viewed the PBL sessions as more challenging than the traditional, especially in terms of preparation. Yet, this was deemed to be a positive element of PBL, as it stimulated deeper learning for the lecturer as well as the students.

Lecturer perspective

In terms of preparation, I found the PBL sessions more difficult. With a normal session, you've got a lot of control over where the subsequent discussion goes; there's a lot more certainty and a clear structure as to where you go with it. The first PBL session I ran was difficult because I didn't know what the students were going to present back through their discussions. I knew what I had given them, but I had no idea what they were going to come back with, especially as the problems and scenarios posed were quite complex. So the preparation was really difficult because I almost had to come up with hypotheticals myself in advance of the session. I had to challenge myself to make sure I was as well versed as possible for any uncertainties or unknowns that could come up. On reflection, PBL sessions are more challenging because I haven't had as much experience of teaching as maybe others who have been in this racket for 15 to 20 years! I imagine that the more teaching experience you have and the more knowledge of the subject area you can draw on,

PBL becomes easier to plan and deliver. That said, I think the planning of PBL is always an important and time-consuming element of this particular pedagogical approach, almost as if it were a CPD activity; you can't just rock up and wing it, and still expect to deliver a good learning experience!

Discussion

Through focus groups, an unstructured interview and vignettes, we have presented postgraduate students' and their lecturer's experiences of PBL within a sport and exercise psychology module. These findings extend existing education research (e.g. Martin et al., 2008; Smith, Duncan et al., 2013) by considering PBL as a tool for developing employability skills in postgraduates, a somewhat neglected area, potentially because of the focus on employability skills in undergraduate curricula. Given recent advancements in the professionalisation of Sport and Exercise Psychology as a career pathway, it is vital that such research is conducted to identify potential ways in which postgraduate students can be supported to make the gradual transition from taught study to their vocational career. By developing employability skills through PBL, it is anticipated that students' chances of achieving this outcome are optimised, as the transferable skills developed should help them secure opportunities for further professional training and/or a 'first' job in a different context. Our data analysis and presentation methods are novel within this field and offer an alternative perspective for interpreting findings from PBL research.

Students were not asked directly about employability skills development nor was this explicitly referred to in PBL sessions during the module. It is striking therefore that two of the most salient benefits of PBL discussed by students were their increased awareness of the translatability of their academic experiences and knowledge to the workplace, and, their 'soft' or 'work ready' skills development. Importantly, these are highlighted areas of concern in Wakeham's (2016) review, based on evidence that both are currently lacking in STEM graduates and the latter are highly valued by graduate employers. Moreover, students' responses here suggested that their PBL experiences made them aware of 'soft' skills development (e.g. interpersonal sensitivity) and why and how these skills are relevant in the workplace (e.g. adapting thinking to meet contextual demands). They also gained insight into how different 'soft' employability skills 'look', for instance, they articulated what they meant by 'critical thinking' and could recognise its development. They described it in terms of 'voicing and discussing different opinions; debate; disagreeing with people; thinking on your own accord'. In our own experiences, enabling students to recognise and reflect on development of these skills in sport and exercise psychology is a challenge, which is not surprising given that many are somewhat abstract (e.g. creativity, interpersonal sensitivity, flexible thinking). However, within this study, PBL appeared to offer an experiential context where students could recognise both the development of these skills and their work-based relevance. It is important to note, that whilst the participants suggested that the PBL sessions helped develop their 'soft' skills, given the methodological approach adopted within this study, it is difficult to determine the extent to which PBL sessions directly influenced the professional development of students, compared with the more traditional pedagogical approaches. Thus, measuring the development of skills represents an important avenue for future research. Nevertheless, because such skills are deemed necessary for students to operate effectively in the workplace (Cooper et al., 2010; Fahnert, 2015; Hung, 2013;

Wilson, 2012), developing an awareness and being able to demonstrate these skills are likely to benefit students when applying for future employment.

Interestingly, PBL seemed to have a galvanising effect on both the lecturer and the students. The lecturer described the planning and preparation involved as more time consuming and challenging than other more traditional pedagogical approaches. However, the learning and teaching experience generated by PBL was reported to be far more stimulating and satisfying for students and the lecturer. Such findings lend support to previous research which has demonstrated PBL can be stimulating and enjoyable for undergraduate students (Bethell & Morgan, 2011; Konstantaki, 2015). This study extends the findings of this previous research by demonstrating that PBL was not only more satisfying for the students but also for the lecturer. From the lecturer's perspective, PBL sessions offered an opportunity for 'Learning whilst Leading'. Specifically, the experiences reported here indicate that if properly applied, PBL could represent an approach through which transferable employability skills may be maintained and enhanced by learners of any age, background or experience, thus supporting and extending findings established with undergraduate students (e.g. Martin et al., 2008; Smith, Duncan et al., 2013). The additional contribution of findings from the present study to this previous literature is that PBL also seems beneficial for enhancing employability skills within postgraduate students. In short, the findings from this study suggest that PBL could represent an effective method through which lifelong learning may occur. However, when considering adopting PBL as a pedagogical approach, lecturing staff may want to carefully evaluate their own competence to plan and deliver such sessions; given their highly complex and interactive nature, the success of PBL could depend on the willingness, enthusiasm and maturity of the lecturer as much as it does the student body, but also the relevance to context and what is being assessed. Despite such suggestions, it is important to note here that these are based on data collected within a small-scale case study, and thus future larger scale research is needed to substantiate these suggestions and determine their transferability to the rest of the population.

Conclusions

This study offers a unique insight into experiences of PBL within a postgraduate context, in particular, the role of PBL in developing employability skills in postgraduate students. Taken holistically, presented findings suggest that whilst PBL sessions can be time-consuming and challenging for lecturers to develop and deliver, this was outweighed by the benefits offered to develop skills sought by graduate employers. PBL facilitated students' awareness of the soft skills they were developing during their degree, a need previously highlighted by employers (Wakeham, 2016). Promisingly, the students discussed their learning in developmental terms, continuing into and during employment, an essential perspective in the dynamic contemporary workplace (Wakeham, 2016). Further research is now required to consider the consistency of our findings with larger groups of participants and across other courses and institutions. Nevertheless, based on the findings presented in this study, and those of previous research (e.g. Martin et al., 2008; Smith, Duncan et al., 2013), the authors recommend that educators carefully consider a variety of teaching and learning approaches in their attempts to ensure that employability skills are truly embedded within the curriculum, however this should only be done when it is authentic and relevant to do

so. Such choices may influence the extent to which lecturers can exhibit as well as encourage a philosophy of lifelong learning to their students.

Note

1. This case study focuses on qualitative data collected from four of the students and is part of a wider mixed methods study which also involved quantitative data collection with the four students who participated in the focus groups, plus four of the remaining ten students. These eight students were selected at random and all of them were approached to participate in the focus group interviews but only four volunteered to participate in this phase of the project.

Acknowledgement

The authors thank Leeds Beckett University Centre for Learning and Teaching who provided funding for this project through their Curriculum Innovative Funding.

ORCID

Helen J. Heaviside  <http://orcid.org/0000-0002-5074-3705>

References

- Association of Graduate Recruiters. (2016). *Association of graduate recruiters (AGR) response to 2015 higher education green paper consultation*. Retrieved from https://www.agr.org.uk/write/Documents/HE_Green_Paper_AGR_Submission_-_Jan_2016.pdf
- Barrell, J. (2007). *Problem based learning and enquiry approach*. Thousand Oaks, CA: Corwin Press.
- Beckem, J.M., & Watkins, M. (2012). Bringing life to learning: Immersive experiential learning simulations for online and blended courses. *Journal of Asynchronous Learning Networks*, 16, 61–71. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1000091.pdf>
- Bethell, S., & Morgan, K. (2011). Problem-based and experiential learning: Engaging students in an undergraduate physical education module. *The Journal of Hospitality, Leisure, Sport and Tourism*, 10, 128–134. doi:10.3794/johlste.101.365
- Bhadwa, S. (2017). Why do students go to university and how do they choose which one? *Times Higher Education*. Retrieved from <https://www.timeshighereducation.com/student/news/why-do-students-go-university-and-how-do-they-choose-which-one>
- Blodgett, A.T., Schinke, R.J., Smith, B., Peltier, D., & Pheasant, C. (2011). In indigenous words: Exploring vignettes as a narrative strategy for presenting the research voices of Aboriginal community members. *Qualitative Inquiry*, 17, 522–533. doi:10.1177/1077800411409885
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101. doi:10.1191/1478088706qp063oa
- Carless, D., & Sparkes, A. (2008). The physical activity experiences of men with serious mental illness: Three short stories. *Psychology of Sport and Exercise*, 9, 191–210. doi:10.1016/j.psychsport.2007.03.008
- Carrió, M., Larramona, P., Baños, J.E., & Pérez, J. (2011). The effectiveness of the hybrid problem-based learning approach in the teaching of biology: A comparison with lecture-based learning. *Journal of Biological Education*, 45, 229–235. doi:10.1080/00219266.2010.546011
- Carvalho, A. (2016). The impact of PBL on transferable skills development in management education. *Innovations in Education and Teaching International*, 53, 35–47. doi:10.1080/14703297.2015.1020327
- Chung, J.C.C., & Chow, S.M.K. (2004). Promoting student learning through a student-centred problem-based learning subject curriculum. *Innovations in Education and Teaching International*, 41, 157–168. doi:10.1080/1470329042000208684

- Cooper, L., Orrell, J., & Bowden, M. (2010). *Work integrated learning – A guide to effective practice*. Abingdon: Routledge.
- Cornell University Centre for Teaching Excellence. (2017). *Problem-based learning*. Retrieved from <https://www.cte.cornell.edu/teaching-ideas/engaging-students/problem-based-learning.html>
- Dahlgren, M.A. (2000). Portraits of PBL: Course objectives and students' study strategies in computer engineering, psychology and physiotherapy. *Instructional Science*, 28, 309–329. doi:10.1023/A:1003961222303
- Department for Education. (2017). *Graduate labour market statistics 2016*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/610805/GLMS_2016_v2.pdf
- Dolmans, D.H., De Grave, W., Wolfhagen, I.H., & van der Vleuten, C.P. (2005). Problem-based learning: Future challenges for educational practice and research. *Medical Education*, 39, 732–741. doi:10.1111/j.1365-2929.2005.02205.x
- Doody, O., Slevin, E., & Taggart, L. (2013). Preparing for and conducting focus groups in nursing research: Part 2. *British Journal of Nursing*, 22, 170–173. doi:10.12968/bjon.2013.22.3.170
- Duncan, M.J. (2009). The student experience of online problem based learning in sport and exercise science. *Practice and Evidence of Scholarships of Teaching and Learning in Higher Education*, 4, 95–115. Retrieved from <http://community.dur.ac.uk/pestlhe.learning/index.php/pestlhe/article/viewFile/35/51>
- Duncan, M.J., & Al-Nakeeb, Y. (2006). Using problem-based learning in sports related courses: An overview of module development and student responses in an undergraduate sports studies module. *The Journal of Hospitality, Leisure, Sport and Tourism*, 5, 50–57. doi:10.3794/johlste.51.113
- Duncan, M.J., Smith, M., & Cook, K. (2013). Implementing online problem based learning (PBL) in postgraduates new to both online learning and PBL: An example from strength and conditioning. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 12, 79–84. doi:10.1016/j.jhlste.2012.11.004
- Erickson, K., Backhouse, S.H., & Carless, D. (2016). “The ripples are big”: Storying the impact of doping in sport beyond the sanctioned athlete. *Psychology of Sport and Exercise*, 24, 92–99. doi:10.1016/j.psychsport.2016.01.010
- Fahnert, B. (2015). On your marks, get set, go! – Lessons from the UK in enhancing employability of graduates and postgraduates. *FEMS Microbiology Letters*, 362, 1–6. doi:10.1093/femsle/fnv150
- Fife, W. (2005). *Doing fieldwork*. New York, NY: Palgrave Macmillan.
- Gould, D., Lauer, L., Rolo, C., Jannes, C., & Pennisi, N. (2008). The role of parents in tennis success: Focus group interviews with junior coaches. *The Sport Psychologist*, 22, 18–37. doi:10.1123/tsp.22.1.18
- Hung, W. (2013). Problem-based learning: A learning environment for enhancing learning transfer. *New Directions for Adult and Continuing Education*, 2013, 27–38. doi:10.1002/ace.20042
- Konstantaki, M. (2015). Applying problem based learning in the Sports Science Curriculum. *Athens Journal of Sports*, 2(1), 7–16. Retrieved from <http://www.athensjournals.gr/>
- Krueger, R.A. (2006). Is it a focus group? Tips on how to tell. *Journal of Wound, Ostomy and Continence Nursing*, 33, 363–366. doi:10.1097/00152192-200607000-00003
- Krueger, R.A., & Casey, M.A. (2015). *Focus groups: A practical guide for applied research*. (5th ed.). London: Sage.
- Kwan, C.Y., & Tam, L. (2009). Commentary: Hybrid PBL – What is in a name? *Journal of Medicinal Education*, 13, 157–165. doi:10.6145/jme
- Lawson, R., Fallshaw, E., Papadopoulos, T., Taylor, T., & Zanko, M. (2011). Professional learning in the business curriculum: Engaging industry, academics and students. *Asian Social Science*, 7, 61–68. doi:10.5539/ass.v7n4p61
- Lowden, K., Hall, S., Elliot, D., & Lewin, J. (2011). *Employers' perceptions of the employability skills of new graduates*. London: Edge Foundation. Retrieved from http://www.educationandemployers.org/wp-content/uploads/2014/06/employability_skills_as_pdf_-_final_online_version.pdf
- Martin, L., West, J., & Bill, K. (2008). Incorporating problem-based learning strategies to develop learner autonomy and employability skills in sports science undergraduates. *The Journal of Hospitality, Leisure, Sport and Tourism*, 7, 18–30. doi:10.3794/johlste.71.169

- McLoone, S., Lawlor, B., & Meehan, A. (2016). The implementations and evaluation of a project-oriented problem-based learning module in a first year engineering programme. *Journal of Problem Based Learning in Higher Education*, 4, 71–80. doi:10.5278/ojs.jpblhe.v0i0.1243
- Monrad, M., & Møhlholt, A. (2017). Problem-based learning in social work education: Students' experiences in Denmark. *Journal of Teaching in Social Work*, 37, 71–86. doi:10.1080/08841233.2016.1271382
- Plummer-D'Amato, P. (2008). Focus group methodology part 1: Considerations for design. *Nursing Research*, 16, 57–69. doi:10.12968/ijtr.2008.15.3.28727
- Redmond, R.A., & Curtis, E.A. (2009). Focus groups: Principles and process. *Nurse Researcher*, 16, 57–69. doi:10.7748/nr2009.04.16.3.57.c6946
- Rutt, L., Gray, C., Turner, R., Swain, J., Hulme, S., & Pomeroy, R. (2013). A social constructivist approach to introducing skills for employment to Foundation Degree students. *Research in Post-compulsory Education*, 18, 280–296. doi:10.1080/13596748.2013.819268
- Scott, C.L. (2015). The futures of learning 3: What kind of pedagogies for the 21st century? *Education Research and Foresight*, 15, 1–21. Retrieved from: <http://unesdoc.unesco.org/images/0024/002431/243126e.pdf>
- Smith, B., & Sparkes, A. (2009). Narrative analysis and sport and exercise psychology: Understanding lives in diverse ways. *Psychology of Sport and Exercise*, 10, 279–288. doi:10.1016/j.psychsport.2008.07.012
- Smith, B., Papathomas, A., Martin Ginis, K.A., & Latimer-Cheung, A.E. (2013). Understanding physical activity in spinal cord injury rehabilitation: Translating and communicating research through stories. *Disability and Rehabilitation*, 35, 2046–2055. doi:10.3109/09638288.2013.805821
- Smith, D.J., & Valentine, T. (2012). The use and perceived effectiveness of instructional practices in two-year technical colleges. *Journal on Excellence in College Teaching*, 23, 133–161. Retrieved from https://getd.libs.uga.edu/pdfs/smith_daniel_j_201005_edd/smith_daniel_j_201005_edd.pdf
- Smith, M., Duncan, M., & Cook, K. (2013). Graduate employability: Student perceptions of PBL and its effectiveness in facilitating their employability skills. *Practice and Evidence of Scholarship of Teaching and Learning in Higher Education*, 8, 217–240. Retrieved from <http://community.dur.ac.uk/pestlhe.learning/index.php/pestlhe/article/viewFile/93/108>
- Sparkes, A., & Smith, B. (2014). *Qualitative research methods in sport, exercise and health*. Oxon: Routledge.
- Staff, H.R., Didymus, F.F., & Backhouse, S.H. (2017). Coping rarely takes place in a social vacuum: Exploring antecedents and outcomes of dyadic coping in coach-athlete relationships. *Psychology of Sport and Exercise*, 30, 91–100. doi:10.1016/j.psychsport.2017.02.009
- Then, K.L., Rankin, J.A., & Ali, E. (2014). Focus group research: What is it and how can it be used? *Canadian Journal of Cardiovascular Nursing*, 24, 16–22. Retrieved from <https://www.ncbi.nlm.nih.gov/labs/journals/can-j-cardiovasc-nurs/>
- Tracy, S. (2010). Qualitative quality: Eight “Big-Tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16, 837–851. doi:10.1177/1077800410383121
- Van Gog, T., & Rummel, N. (2010). Example-based learning: Integrating cognitive and social-cognitive research perspectives. *Educational Psychology Review*, 22, 155–174. doi:10.1007/s10648-010-9134-7
- Wakeham, W. (2016). *Wakeham review of STEM degree provision and graduate employability*. Innovation and Skills: Department for Business. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/518582/ind-16-6-wakeham-review-stem-graduate-employability.pdf
- Wells, P. (2011). *Postgraduate taught experience survey*. York: The Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/system/files/ptes_report_2011_0.pdf
- Wilson, T. (2012). *A review of business – University collaboration*. London: Department for Business, Innovation and Skills. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32383/12-610-wilson-review-business-university-collaboration.pdf